



FRIENDLY FIRE AND COLLATERAL DAMAGE AVOIDANCE

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Avoiding friendly fire and minimizing collateral damage are crucial to employing [close air support](#) (CAS) effectively. CAS operations are conducted in close proximity to friendly forces; therefore, CAS procedures, training, and scenario rehearsals require particular emphasis on the avoidance of friendly fire and civilian casualties. Although occasionally attributed to weapons malfunction, friendly fire and civilian casualties are most often the result of confusion on and over the battlefield. The law of war does not prohibit collateral damage but does prohibit attacks that cause excessive collateral damage in relation to the concrete and direct military advantage. Collateral damage, particularly civilian casualties, may increase the risk of the ability to achieve strategic, operational, or campaign objectives. Causes include misidentification of targets, target location errors, target or friendly locations incorrectly transmitted or received, or a loss of situational awareness by [joint terminal attack controllers](#) (JTACs), CAS aircrews, or [air support request](#) agencies. Items that can significantly reduce the likelihood of friendly fire and civilian casualties are sound procedures for friendly force tracking, immediate air requests and clearance of [fires](#), detailed mission planning, realistic training and mission rehearsal, use of friendly tagging or tracking devices, and effective coordination. Excessive collateral damage should be considered a critical vulnerability, and planners should consider second and third order effects during operational planning.

All participants in the CAS employment process are responsible for the effective and safe planning and execution of CAS. Each participant should make every effort possible to identify friendly units and enemy forces correctly prior to targeting, clearing fires, and weapons release. [Combat identification](#) (CID) is defined as the process of attaining an accurate characterization of detected objects in the operational environment sufficient to support an engagement decision (Joint Publication 3-09, [Joint Fire Support](#)). Performed in accordance with the [rules of engagement](#), CID characterizations enable engagement decisions and the subsequent use, or prohibition of use, of weaponry to create both lethal and nonlethal effects to accomplish military objectives. It is critical for all involved in the CAS process to realize that their actions can either prevent or contribute to unintentional or inadvertent friendly fire incidents.

Risk assessment is a critical factor in preventing friendly fire and civilian casualties. As the battlefield situation changes, commanders and staffs should make continuous tactical risk assessments. Risk assessments involve the processing of available

information to ascertain a level of acceptable risk to friendly forces or noncombatants. Based on the current risk assessment, the supported commander weighs the benefits and liabilities of authorizing specific weapons types or a particular type of [terminal attack control](#). Considerations during risk assessment should include, but not be limited to the following: capabilities of units involved, information flow, uncertainty, communications reliability, battle tracking, targeting information, weather, and ordnance effects. Proximity of friendly troops is also a key factor during risk assessment.

[Risk-estimate distances](#) allow the supported commander to estimate the potential danger to friendly troops from a CAS attack. They are discussed as 0.1 percent probability of incapacitation (Pi) (i.e., 1 in 1000 Pi). Ordnance delivery inside the 0.1 percent Pi distance will be considered “danger close.” The supported commander must accept responsibility for the risk to friendly forces when targets are inside the 0.1 percent Pi distance. Risk acceptance is confirmed when the supported commander passes their initials to the attacking CAS aircraft through the JTAC or FAC(A), signifying they accept the risk inherent in ordnance delivery inside the 0.1 percent Pi distance. See Joint Publication 3-09.3, [Close Air Support](#), and Air Force Tactics, Techniques, and Procedures (TTP) 3-2.6, [Multi-Service TTP for Joint Application of Firepower \(JFIRE\)](#), for more detailed discussions of risk-estimate distances.
